

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P311016

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CP187-W2A-U-4500K**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Test Information

Test Method: LM-79-08
Report Number: P311016
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 4500K TUNABLE CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment:

<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
AS-5443-2	Good	REFLECTOR
AS-5443-3	Good	DRIVER
AS-5443-4	Good	UPPER MODULE
AS-5443-5	Good	LENS
AS-5443-6	Good	DRIVER 2
AS-5443-7	Good	TRIM RING

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5243.0 lumens
Efficiency: N/A
Efficacy: 108.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

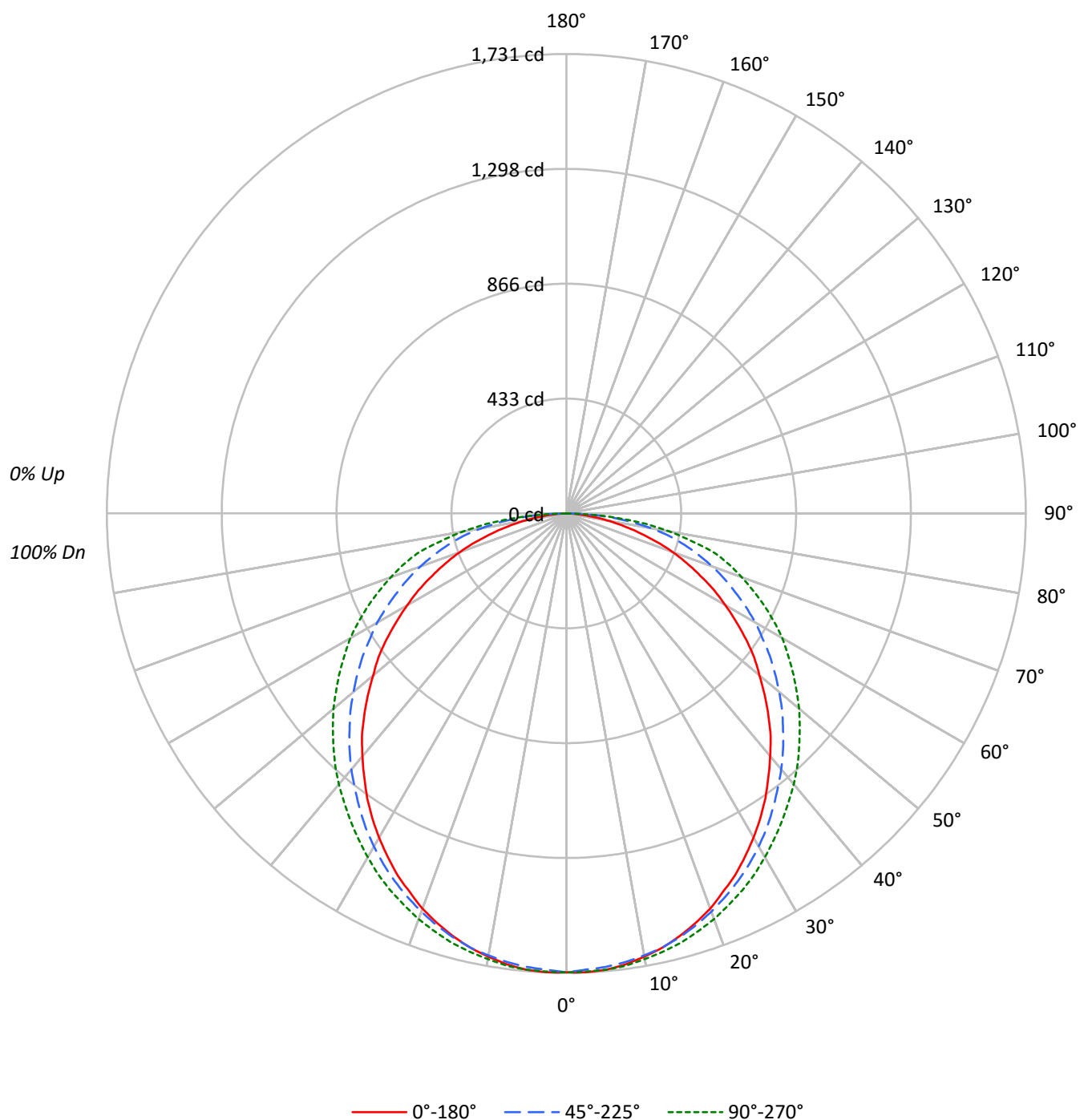
Input Watts (W): 48.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		100
1	108	103	98	94	105	100	96	92	96	92	89		92	89	87		82
2	98	89	81	75	95	87	80	74	83	78	73		80	75	71		67
3	89	77	69	62	86	76	68	61	73	66	60		70	64	59		56
4	81	68	59	52	79	67	58	52	64	57	51		62	56	50		47
5	74	61	52	45	72	60	51	44	58	50	44		56	49	43		41
6	69	55	46	39	67	54	45	39	52	44	38		50	43	38		36
7	64	50	41	34	62	49	40	34	47	39	34		46	39	34		31
8	59	45	37	31	57	45	36	30	43	36	30		42	35	30		28
9	55	41	33	27	54	41	33	27	40	32	27		39	32	27		25
10	52	38	30	25	50	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2326	2326	2326
5°	2331	2317	2331
10°	2317	2310	2329
15°	2297	2302	2331
20°	2269	2287	2329
25°	2234	2270	2327
30°	2192	2251	2324
35°	2149	2229	2326
40°	2099	2212	2340
45°	2049	2198	2360
50°	1988	2192	2396
55°	1938	2195	2444
60°	1863	2214	2528
65°	1778	2238	2620
70°	1683	2306	2765
75°	1501	2405	3020
80°	1281	2548	3087
85°	912	2524	2953



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.6	3.1
10°-20°	467.9	8.9
20°-30°	706.7	13.5
30°-40°	851.8	16.2
40°-50°	894.2	17.1
50°-60°	836.6	16.0
60°-70°	690.9	13.2
70°-80°	470.8	9.0
80°-90°	160.5	3.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1338.3	25.5
0°-40°	2190.0	41.8
0°-60°	3920.8	74.8
0°-90°	5243.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5243.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1729	1729	1729	1729	1729	
5°	1726	1724	1715	1726	1726	164
15°	1649	1651	1653	1670	1673	465
25°	1505	1512	1529	1559	1567	692
35°	1308	1322	1357	1402	1416	817
45°	1077	1099	1155	1218	1240	830
55°	826	859	936	1012	1042	738
65°	558	605	703	792	823	554
75°	289	355	463	550	581	308
85°	59	116	164	184	191	74
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1729.1	1729.1	1729.1	1729.1	1729.1
2.5°	1730.8	1729.1	1720.4	1729.1	1727.4
5°	1725.6	1723.9	1715.2	1725.6	1725.6
7.5°	1713.4	1713.4	1704.7	1716.9	1718.7
10°	1696.0	1696.0	1690.8	1704.7	1704.7
12.5°	1675.2	1675.2	1675.2	1689.1	1690.8
15°	1649.1	1650.8	1652.6	1670.0	1673.4
17.5°	1617.8	1621.2	1626.5	1647.3	1650.8
20°	1584.7	1588.2	1596.9	1621.2	1626.5
22.5°	1543.0	1551.7	1563.8	1591.7	1596.9
25°	1504.7	1511.7	1529.0	1558.6	1567.3
27.5°	1457.7	1468.2	1490.8	1522.1	1534.3
30°	1410.8	1421.2	1449.0	1485.6	1496.0
32.5°	1360.3	1376.0	1405.5	1443.8	1456.0
35°	1308.1	1322.0	1356.8	1402.1	1416.0
37.5°	1250.7	1269.9	1308.1	1356.8	1374.2
40°	1195.1	1215.9	1259.4	1311.6	1332.5
42.5°	1139.4	1160.3	1209.0	1268.1	1289.0
45°	1076.8	1099.4	1155.0	1217.7	1240.3
47.5°	1014.1	1042.0	1102.9	1169.0	1193.3
50°	949.8	981.1	1047.2	1116.8	1144.6
52.5°	892.4	922.0	991.5	1066.3	1092.4
55°	826.3	859.3	935.9	1012.4	1042.0
57.5°	758.4	795.0	876.7	960.2	989.8
60°	692.3	732.3	822.8	906.3	939.3
62.5°	628.0	668.0	761.9	848.9	881.9
65°	558.4	605.4	702.8	791.5	822.8
67.5°	492.3	542.7	645.4	732.3	763.7
70°	427.9	476.6	586.2	671.5	702.8
72.5°	358.3	414.0	523.6	612.3	645.4
75°	288.8	354.9	462.7	549.7	581.0
77.5°	224.4	292.2	400.1	471.4	487.1
80°	165.3	234.8	328.8	379.2	398.4
82.5°	106.1	175.7	250.5	287.0	302.7
85°	59.1	116.5	163.5	184.4	191.3
87.5°	24.4	50.4	66.1	74.8	74.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)